

Service Information

Mazda Motor Corporation

3-1, Shinchu, Fuchu-cho, Aki-gun
Hiroshima 730-8670, Japan
TEL : 81(82)287-5323
FAX : 81(82)287-5220



Category T	Repair Guidance	Ref. No. R046/17A	Page 1 of 4
Coverage <input type="checkbox"/> Distributor only <input checked="" type="checkbox"/> Please inform your dealers		Date Issued June 28, 2017	
Please convey this information to your <input type="checkbox"/> Director <input checked="" type="checkbox"/> General Manager <input checked="" type="checkbox"/> Warranty Dept. <input checked="" type="checkbox"/> Parts Dept. <input checked="" type="checkbox"/> Training Dept. <input checked="" type="checkbox"/> Field Rep.		Date Revised August 2, 2017	
Applicable Model and Equipment Mazda3 (BN), Mazda6 (GL), CX-3 (DK) and CX-5 (KF)		Applicable Countries and/or Vehicle Specifications Worldwide	

REVISED

Revision Note: “Subject”, “DESCRIPTION” and “REPAIR PROCEDURE” have been changed. Changes are noted below in Red text.

Subject: Forward Sensing Camera (FSC) related concerns with DTC C1001:92

DESCRIPTION

Some customers may experience following symptoms relating to the Forward Sensing Camera (FSC) with DTC C1001:92 [Forward sensing camera (FSC) poor field of view] stored in memory. All of these symptoms may occur at the same time.

Symptom A: When front view is poor or it is raining at night, following warning lights may illuminate.

	Master Warning Light
	Adaptive LED Headlights (ALH) Warning Light
	Lane-keep Assist System (LAS) & Lane Departure Warning System (LDWS) Warning Light
	Smart Brake Support/Smart City Brake Support (SBS/SCBS) Indicator Light

Symptom B: Due to poor visibility or rain at night, FSC may deactivate its operation. At the same time, warning lights may illuminate by the fail safe function, which causes the following functions to be deactivated as well.

- Smart City Brake Support [Reverse] (SCBS R)
- Driver attention alert system

Symptom C: **[Mazda3 with ALH only]**

Due to poor visibility or rain at night, Adaptive LED Headlights (ALH) warning light may stay on and ALH may deactivate its function until engine switch is turned off. When front view becomes clear and engine switch is turned off and then turned on, ALH resumes its function.

CAUSE

Symptom A/B: Control logic of the FSC was too sensitive.

Symptom C: Control logic of the auto leveling control module did not satisfy the FSC requirement to resume the ALH function when front view becomes clear.

MASS PRODUCTION CHANGE

Symptom A/B: Control logic of the FSC has been modified not to stop the systems that can operate even with poor front view.

Symptom C: Control logic of the auto leveling control module has been modified to resume the ALH function when front view becomes clear.

SUBJECT VIN & PRODUCTION DATE (Range)

Symptom A/B:

Mazda3 (BN) / (BM with VIN 500001~ for Russia)

Japan Built

Spec.	VIN Range		Production Date Range
Australia	JM0 BN **** **	100015 - 163288	May 25, 2016 - Apr. 26, 2017
General (R.H.D.)	JM6 BN **** **		
General (L.H.D.)	JM7 BN **** **		
Israel	JMZ BN **** **	500019 - 521531	Aug. 1, 2016 - Apr. 26, 2017
Europe (L.H.D. & UK Specs.)	JMZ BN **** **		May 26, 2016 - Apr. 26, 2017
Russia	JMZ BM **** **		
US (2017 MY)	JM1 BN **** **	100017 - 152005	Jun 27, 2016 - Apr. 26, 2017

Thailand Built

Thailand	MM8 BN **** **	200201 - 999999	Sep. 26, 2016 - Jun. 8, 2017
----------	----------------	-----------------	------------------------------

México Built

General (L.H.D.)	3MZ BN **** **	200003 - 206771	Sep. 22, 2016 - Apr. 24, 2017
Europe (L.H.D. Spec.)	3MZ BN **** **	300015 - 317371	Sep. 22, 2016 - Apr. 24, 2017
US (2017 MY)	3MZ BN **** **	100013 - 151186	Sep. 1, 2016 - Apr. 24, 2017

China Built

China	LVR HD **** *N	TBD	Dec. 2017 - TBD
-------	----------------	-----	-----------------

Mazda6 (GL) / (GJ with VIN 500001~ for Russia)

Spec.	VIN Range		Production Date Range
Australia	JM0 GL **** **	100008 - 125250	Jul, 11, 2016 - Apr. 26, 2017
General (R.H.D.)	JM6 GL **** **		
General (L.H.D.)	JM7 GL **** **		
Israel	JMZ GL **** **	500015 - 528523	Jun. 24, 2016 - Apr. 26, 2017
Europe (L.H.D. & UK Specs.)	JMZ GL **** **		
Russia	JMZ GJ **** **		
US (2017 MY)	JM1 GL **** **	100017 - 138122	Jun. 13, 2016 - Apr. 26, 2017

CX-3 (DK)

Japan Built

Spec.	VIN Range		Production Date Range
General (R.H.D.)	JM6 DK **** **	300003 - 304276	Oct. 19, 2016 - Apr. 26, 2017
Europe (L.H.D. Spec.)	JMZ DK **** **	300022 - 319416	Dec. 1, 2016 - Apr. 26, 2017

Thailand Built

Australia	MM0 DK **** **	200333 - 999999	Feb. 27, 2017 - Jun. 8, 2017
Europe (UK Spec.)	MMZ DK **** **	200201 - 999999	Feb. 21, 2017 - Jun. 8, 2017
Thailand	MM8 DK **** **	200202 - 999999	Feb. 20, 2017 - Jun. 8, 2017

**CX-4 (GK)
China Built**

Spec.	VIN Range		Production Date Range
China	TBD	TBD	Apr. 2017 - TBD

**CX-5(KF) / (KE with VIN 600001~ for Russia)
Japan Built**

Spec.	VIN Range		Production Date Range
Australia	JM0 KF**** **	100013 - 107789	Feb. 1, 2017 - Apr. 26, 2017
General (R.H.D.)	JM6 KF**** **		
General (L.H.D.)	JM7 KF**** **		
Israel	JMZ KF**** **		
Europe (L.H.D. & UK Specs.)	JMZ KF**** **	600052 - 613467	Feb. 14, 2017 - Apr. 26, 2017
Russia	JMZ KE**** **		
US (2017 MY)	JM3 KF**** **	100044 - 144516	Dec. 27, 2016 - Apr. 26, 2017

Symptom C:

**Mazda3 (BN) / (BM with VIN 500001~ for Russia) with ALH
Japan Built**

Spec.	VIN Range		Production Date Range
Australia	JM0 BN **** **	100015 - 149792	May 25, 2016 - Mar. 1, 2017
General (R.H.D.)	JM6 BN **** **		
General (L.H.D.)	JM7 BN **** **		
Israel	JMZ BN **** **	500019 - 516949	Aug. 1, 2016 - Mar. 1, 2017
Europe (L.H.D. & UK Specs.)	JMZ BN **** **		May 26, 2016 - Mar. 1, 2017
Russia	JMZ BM **** **		

Thailand Built

Thailand	MM8 BN **** **	200201 - 202936	Sep. 26, 2016 - May 4, 2017
----------	----------------	-----------------	-----------------------------

México Built

General (L.H.D.)	3MZ BN **** **	200003 - 999999	Sep. 22, 2016 - Jun. 5, 2017
Europe (L.H.D. Spec.)	3MZ BN **** **	300015 - 999999	Sep. 22, 2016 - Jun. 5, 2017

REPAIR PROCEDURE

NOTE: If DTC C1001:92 is not stored in memory, this Service Information is not applicable.
Diagnose according to the Workshop Manual.

Symptom A/B:

Replace the FSC with a modified one according to the Workshop Manual "FORWARD SENSING CAMERA (FSC) REMOVAL/INSTALLATION".

Symptom C:

Replace the auto leveling control module with a modified one according to the Workshop Manual "AUTO LEVELING CONTROL MODULE REMOVAL/INSTALLATION".

If needed, please explain to the customer about the FSC and the improvement using attached document.

PARTS INFORMATION

Part Number		Part Name	Q'ty	Remark
New	Old			
B61L-67-XCXJ	B61L-67-XCXH	CAMERA ,FORWARD SENSING	1	For symptom A/B
B63E-51-027B	B63E-51-027A	CONTROL UNIT,ADB	1	For symptom C

WARRANTY INFORMATION

Symptom A/B: Replacing FSC

Assembly group	T - Body Electrical System		
Subassembly group	05 -WARNING SYSTEM		
Symptom Code	64 (Improper operation)		
Damage Code	9W (Internal failure)		
Causal Part No.	B61L-67-XCXJ		
Q'ty	1		
Operation No. & Labor Hours	XXN5PARX	w/o i-stop	with i-stop
		0.4 Hrs.	0.5 Hrs.
Period Covered	Normal warranty period		
Prior approval necessary	NO		

Symptom C: Replacing auto leveling control module

Assembly group	T - Body Electrical System		
Subassembly group	05 -WARNING SYSTEM		
Symptom Code	61 (Inoperative)		
Damage Code	9W (Internal failure)		
Causal Part No.	B63E-51-027B		
Q'ty	1		
Operation No. & Labor Hours	XXN5PBRX & 0.3 Hrs.		
Period Covered	Normal warranty period		
Prior approval necessary	NO		

Symptom A/B and C: Replacing FSC and auto leveling control module

Assembly group	T - Body Electrical System		
Subassembly group	05 -WARNING SYSTEM		
Symptom Code	64 (Improper operation)		
Damage Code	9W (Internal failure)		
Causal Part No.	B61L-67-XCXJ		
Q'ty	1		
Operation No. & Labor Hours	XXN5PCR X	w/o i-stop	with i-stop
		0.5 Hrs.	0.6 Hrs.
Period Covered	Normal warranty period		
Prior approval necessary	NO		

NOTE: Claim the auto leveling control module as related part.

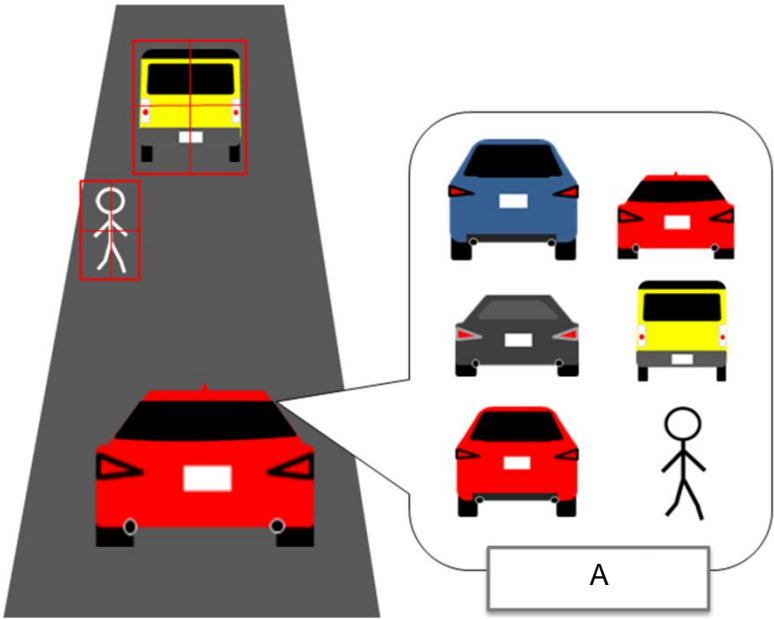
Kimiaki Inooka
Manager, Technical Information Gr.
Technical Service Dept.
Mazda Motor Corporation

(For Mazda customers)

Improvement of Forward Sensing Camera (FSC)

This document explains the control technology of the FSC, situations when the FSC cannot detect objects and the improvement and notifications.

1. Forward Sensing Camera system
- The Forward Sensing Camera recognizes objects comparing the characteristics of captured images to pre-defined data (A) for vehicles and pedestrians.

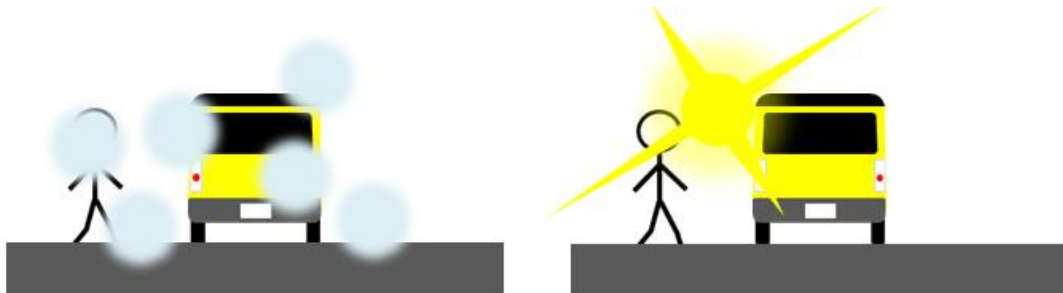


FSC is located at interior side of upper center of the windshield. Mazda employs single camera system while some brands employ stereo camera system. Generally the single camera is located closer to the windshield than the stereo camera. Each system has advantage and disadvantage.

Single camera system	A diagram showing a single camera unit (represented by a rectangle) mounted on the interior side of the windshield. A dashed line represents the camera's field of view. A blue dot representing a rain drop is shown on the windshield. The diagram illustrates that the rain drop appears larger when it is closer to the camera.	Advantage: Less effect by dashboard reflection (covered) Disadvantage: A rain drop looks larger at closer location
Stereo camera system	A diagram showing two camera units (represented by rectangles) mounted on the interior side of the windshield. Dashed lines represent the overlapping fields of view of the two cameras. A blue dot representing a rain drop is shown on the windshield. The diagram illustrates that the rain drop appears smaller when it is further from the cameras.	Advantage: A rain drop looks smaller at further location Disadvantage: More effect by dashboard reflection (if not covered)

2. Situations when the FSC cannot detect objects

When some obstacles exist between the FSC and the object, the FSC may not be able to detect the object. Dirty windshield, rain and dew drops may be the obstacles for the FSC. Strong light like sun light may also disturb the FSC detection.



Smeared spots

Strong light

When the FSC cannot detect objects and the FSC system stops the operation, the status can be monitored in the center display.

Applications > Vehicle status > Warning

3. Improvement

- ALH operation when the poor visibility has gone. **[Mazda3 with ALH only]**
When the FSC cannot detect objects due to poor visibility, Adaptive LED Headlights (ALH) warning light may have stayed on and ALH may have deactivated its function until engine switch was turned off. The new auto leveling control module makes ALH resume its function when the poor visibility has gone.

- FSC deactivation followed by other functions
When the FSC cannot detect objects due to poor visibility, following functions were also deactivated.

- Smart City Brake Support [Reverse] (SCBS R)
- Driver attention alert system

The new FSC will not deactivate those functions at the same time.

In case of driving in rain at night, the system has been improved by not deactivating following functions.

- Adaptive LED Headlights (ALH)
- Lane-keep Assist System (LAS)
- Lane Departure Warning System (LDWS)
- Smart Brake Support (SBS)

Therefore frequency of illumination of these warning/indicator lights has been reduced.

	Master Warning Light
	Adaptive LED Headlights (ALH) Warning Light
	Lane-keep Assist System (LAS) & Lane Departure Warning System (LDWS) Warning Light
	Smart Brake Support/Smart City Brake Support (SBS/SCBS) Indicator Light

NOTE

- In case of driving in rain at night, the SCBS function may be reduced to avoid erroneous operation.
- Status of SCBS can be monitored in the warning screen in the center display.
If automatic braking function of SCBS is deactivated due to nightly rain, no message appears in the warning screen and no warning lights illuminate.
- Under extremely poor visibility condition such as heavy rain, these systems using FSC are deactivated and the corresponding warning lights illuminate.
- These systems are designed to assist the driver in safer driving by reducing the load on the driver and helping to avert collisions or reduce their severity. However, because each system has its limitations, always drive carefully and do not rely solely on the systems.
- Please refer to “i-ACTIVSENSE” section of the owner’s manual for important information of the system.